

AMENDMENTS TO THE CLAIMS:

Complete Listing of Claims

1 Claim 1. (currently amended) A method of logging in a device to a
2 network of devices, each device having an identification number unique to that
3 device stored therein, the identification number having a number of bits, each
4 having a bit position, and the network having an a controller, comprising the
5 steps of:

6 ~~storing, in each device, an identification number unique to that device, the~~
7 ~~identification number having a number of bits, each having a bit position;~~

8 ~~delivering a control code from the controller to each device on the network~~
9 ~~indicating that a login process is to begin;~~

10 ~~broadcasting from the controller a pattern of requests to all devices, each~~
11 ~~request representing a request to each device to acknowledge whether a given~~
12 ~~bit position of its identification number has a given binary value;~~

13 ~~sending receiving acknowledgements from the device logging in devices~~
14 ~~to the controller; and~~

15 ~~traversing a binary tree by the controller in response to the~~
16 ~~acknowledgements, thereby determining the identification number of the device~~
17 ~~logging in.~~

1 Claim 2. (original) The method of Claim 1, wherein the network is a
2 wireless network and the broadcasting and receiving steps are performed with
3 wireless signals.

1 Claim 3. (original) The method of Claim 1, wherein the network is a
2 network of calculators.

1 Claim 4. (original) The method of Claim 1, wherein the network is a local
2 area network of computers.

1 Claim 5. (original) The method of Claim 1, wherein the method is
2 performed by a hardware logic device.

1 Claim 6. (original) The method of Claim 1, wherein the method is
2 performed by a processor-based device.

1 Claim 7. (currently amended) The method of Claim 1, wherein a the
2 first request in the pattern of requests is a request to acknowledge a one rather
3 than a zero, and wherein a the second request in the pattern of requests is a
4 request to acknowledge a zero rather than a one.

1 Claim 8. (original) The method of Claim 1, wherein the
2 acknowledgement is any signal above a noise threshold.

1 Claim 9. (original) The method of Claim 1, further comprising the step of
2 maintaining a tracking register associated with each device to track
3 acknowledgements.

1 Claim 10. (currently amended) The method of Claim 1, wherein a
2 plurality of devices are logging in, and wherein each device logging in ceases to
3 send acknowledgements for subsequent bit positions after it cannot
4 acknowledge acknowledgement with respect to any bit position.

1 Claim 11. (original) The method of Claim 1, further comprising the step of
2 ending the login process if two successive requests for values of the same bit
3 position are not acknowledged.

1 Claim 12. (currently amended) A method of logging in a device to a
2 network of devices, each device having an identification number unique to that
3 device stored therein, the identification number having a number of bits, each
4 having a bit position, and the network having an a controller, comprising the
5 steps of:

6 storing, in each device, an identification number unique to that device, the
7 identification number having a number of bits, each having a bit position;

8 delivering a control code from the controller to each device on the network
9 indicating that a login process is to begin;

10 broadcasting a first request from the controller to all devices, the first
11 request representing a request to each device to acknowledge whether the first
12 bit position of its identification number has a zero;

13 sending acknowledgements to the controller by the devices and receiving
14 the acknowledgements from the devices in accordance with the following sub-
15 steps steps:

16 if an acknowledgement to the first request is received by the controller,
17 repeating the broadcasting step for the next bit position of the identification
18 number; but

19 if no acknowledgement to the first request is received by the controller,
20 broadcasting a second request from the controller to all devices, the second
21 request representing a request to each device to acknowledge whether the first
22 bit of its identification number is a one; and if an acknowledgement to the second
23 request is received, repeating the first broadcasting step for the next bit position
24 of the identification number; and if no acknowledgement to the second request is
25 received, ending the login process;

26 repeating the sending broadcasting and receiving sub-steps steps for
27 each bit position of the identification number; and

28 traversing a binary tree by the controller in response to the
29 acknowledgements, thereby determining the identification number of the device.

1 Claim 13. (currently amended) A network controller for logging login in
2 a device to a network of devices, comprising:
3 processing circuitry for performing the following tasks:
4 delivering a control code to each device on the network indicating
5 ~~indicated~~ that a login process is to begin;
6 broadcasting a pattern of requests to all devices, each request
7 representing a request to each device to acknowledge whether a given ~~first~~ bit
8 position of its identification number has a given binary value;
9 receiving acknowledgements from the devices; and
10 traversing a binary tree in response to the acknowledgements, thereby
11 determining the identification number of the device.

1 Claim 14. (original) The controller of Claim 13, wherein the processing
2 circuitry is a programmable logic device.

1 Claim 15. (original) The controller of Claim 13, wherein the processing
2 circuitry is a processor and program memory.

1 Claim 16. (original) The controller of Claim 13, wherein the network is a
2 local area network of computers, and the controller is part of a network server.

1 Claim 17. (original) The controller of Claim 13, wherein the network is a
2 network of calculators, and the controller is a hardware communications
3 controller.